

Draft Work Plan for Updating Point Source Emission Inventories in the Sacramento Valley and Mountain Counties Using Student Assistants

This project is to provide assistance to small districts in the CCOS domain to review and update their point source emission inventories. Local air districts are responsible for estimating emissions from point sources. For purposes of this work plan, point sources will be defined as permitted sources that emit 10 tons or more per year of any criteria pollutant. These emissions will be used as inputs to the photochemical modeling for CCOS. This work plan applies only to point sources. A separate work plan will cover assistance for area sources.

Districts and Facilities in the Mountain Counties Air Basin

There are seven districts in the Mountain Counties Air Basin. Of those seven, only four districts have point sources that emit over 10 tons per year. The districts are Amador County APCD, El Dorado County APCD, Northern Sierra AQMD, and Tuolumne County APCD. The district offices are located in Jackson, Placerville, Grass Valley and Columbia. Calaveras County APCD and Mariposa County APCD will not receive stationary source assistance as part of this work plan because they have no facilities that emit more than 10 tons per year of a criteria pollutant. Placer County APCD is in both the Mountain Counties and Sacramento Valley Air Basins. There are no facilities in the Mountain Counties portion of Placer County APCD that emit more than 10 tons per year of a criteria pollutant. Therefore, Placer County APCD has been included only in the Sacramento Valley for this project.

There are 28 facilities in the Mountain Counties districts that meet the criteria for this project, as shown in Table 1. Facilities were included if the emissions were approximately 10 tons per year or greater of TOG, NO_x, CO, SO_x, or PM₁₀. Table 1 also includes the number of processes that occur at those facilities. This is to provide an estimate of how much information will need to be gathered for each district. The average number of processes per facility is about 13.

Table 2 shows the number of facilities in 1997 sorted by the type of activity that occurs at each facility. The Standard Industrial Classification (SIC) code is a classification of industries by activity that was established by the federal government. The SIC code allows industries to be grouped to promote comparability of data. As the table shows, the largest number of facilities includes sawmills and sand and gravel operations. Table 2 also shows in which districts these facilities are located.

ARB will provide each district with a list of the facilities that are proposed for review in this project. The list will include the name of the facility, address, contact person and phone number. District staff can correct the facility information as needed. District staff may add or remove facilities as appropriate; a facility may have increased or decreased its emissions since the last update or the emissions may have been recently updated.

Districts in the Sacramento Valley Air Basin

There are nine districts in the Sacramento Valley Air Basin. Eight of those districts will be receiving assistance. The districts are Butte County AQMD, Colusa County APCD, Feather River AQMD, Glenn County APCD, Placer County APCD, Shasta County AQMD, Tehama County APCD, and Yolo-Solano AQMD. The district offices are located in Chico, Colusa, Marysville, Willows, Auburn, Redding, Red Bluff and Davis. Sacramento Metropolitan AQMD will not be receiving assistance funds through this project.

There are 160 facilities in the Sacramento Valley districts (not including Sacramento Metro) that meet the criteria for this project, as shown in Table 1. Facilities were included if the emissions were approximately 10 tons per year or greater of TOG, NO_x, CO, SO_x, or PM₁₀. Table 1 also includes the number of processes that occur at those facilities. The average number of processes per facility is about 5.

Table 3 shows the number of facilities in 1997 sorted by the type of activity, represented by the SIC code. There is a wide variation of activities in the Sacramento Valley. As the table shows, the largest number of facilities involves the preparation of crops for market, specifically the drying of rice. Also significant are the operation and drilling of oil and gas fields, followed by sawmills, rice milling, petroleum bulk stations, and sand and gravel operations. Table 3 also shows in which districts these facilities are located.

ARB will provide each district with a list of the facilities that are proposed for review in this project. The list will include the name of the facility, address, contact person and phone number. District staff can correct the facility information as needed. As in the Mountain Counties, the district can add or remove facilities as they feel are appropriate.

Students

Dr. Daniel Chang and Dr. Mike Kleeman, both of UC Davis, will recruit undergraduate students. There will be six to eight students, hopefully who are Juniors and Seniors majoring in Environmental Engineering at UC Davis or Sacramento State. UC Davis will also provide a graduate student who will lead one of the teams.

Time Frame

Students would be needed for about 3 months during the summer of 2000. The teams will travel to one or two districts for about a week and then return to ARB to enter the data into CEIDARS-LITE. Spring break may also provide time for beginning training.

Training

ARB will provide training to each of the students. Students will be given general training on how emissions are estimated including a discussion of process rates and emission factors. ARB will provide reports that show the current information for the facilities in

each district so those students can familiarize themselves with the types of sources. Each student will be assigned specific facilities to update. Facilities will be grouped into similar activity types, as described below. Students will be trained on the types of processes that normally occur at the facilities to which they have been assigned. Students will be trained in the use of SIC and SCC codes. ARB will train students on CEIDARS-LITE. After collecting the needed data, the students will update the data into CEIDARS-LITE. ARB will also provide training on how to request the needed information from each facility.

Teams

The students will be formed into two teams. Initially it was thought that one team would cover the Mountain Counties and the other team would cover Sacramento Valley. Table 1 shows the number of facilities and processes within each facility for each district. This analysis gives a general guideline on how much work will be required for each district. However, there are 160 facilities in the Sacramento Valley and only 28 in the Mountain Counties. In order to provide the two teams with roughly equal amounts of work, ARB analyzed the types of point sources located in the two areas. Tables 2 and 3 show the number of facilities for each kind of activity type (SIC) by district.

Based on the information in Tables 2 and 3, each district was assigned to a team. The proposed assignment of the districts into the two teams is shown in Table 4. Team 1 would cover the four Mountain Counties districts plus three districts in the Sacramento Valley. Team 2 would cover five Sacramento Valley districts. The main factor in assigning districts to a team was to group districts that have similar types of facilities. Other districts were then assigned to balance the workload between the teams. Table 5 shows the number of facilities and processes that would be handled by each team grouped into six general categories based on SIC.

The data in Table 5 shows, in general, that many facilities with the same SIC are handled completely by a single team. This will allow each member of the team to specialize in certain types of sources. Table 5 also shows that there are some SIC codes which are assigned to only one facility. As much as possible, each student will be assigned similar types of sources so they can focus their learning and maximize the use of ARB and district time as well as their own.

The total number of facilities handled by Team 1 and Team 2 would be 69 and 119, respectively. Although the proposed assignment of the two teams shows that Team 2 would update significantly more facilities, a comparison of the number of processes that would be updated are considerably more even. Team 1 would handle 502 processes compared to 763 for Team 2. Even though Team 2 still would have the larger number of processes, some efficiency will be gained by traveling to fewer districts than Team 1. Team 1 would have seven districts of which four would require an overnight stay. Team 2 would have five districts of which two would require an overnight stay.

A staff person from ARB and UC Davis (team leaders) will accompany and supervise each team. Students will be able to stay overnight if needed at some locations. University vehicles will be available for students to use.

The team leaders will act as liaison with district staff. ARB will develop a protocol of specifically what kind of information the students will gather at each district.

Data Gathering

Each team will travel to their assigned districts. The team will stay as long as needed to gather the data, perhaps 3 to 4 days per district.

Facilities will be contacted with a letter in advance about CCOS. The letter will discuss the CCOS study and explain how students will be helping. The letter will also include forms requesting the data the students will need to update the inventory. The forms for requesting data from the facilities will be adapted from San Luis Obispo County APCD and others that are available. The letter will inform the facility that students will be calling to retrieve any incomplete data or if they have follow-up questions. ARB will develop a draft letter for review by district staff. ARB and district staff will decide whether the letter will be sent by the district or jointly with ARB. The letter will be sent 60 days in advance of when students will be requesting data. The letter will state what the facilities are specifically being asked to provide and the legal basis for the request consistent with H&SC section 40701(g). Hopefully this letter will enlist greater cooperation from facility staff. A deadline of 30 days for facilities to provide the requested data should be specified in the letter. This will allow for district staff or students about 30 additional days to get missing data.

ARB will clearly define what information will be collected from each facility. As an example, for each facility on the list, all criteria pollutants from the facility will be quantified if annual emissions for that pollutant are estimated to be greater than 0.1 ton per year. Forms for students to use to estimate emissions and other information will be developed.

While on-site, the team will consult with district staff on the district's emission inventory data collection and storage procedures. The students will review and update specified point source information for each district. Students may perform activities such as 1) calling facilities for process rate and other needed information, 2) reviewing emission factors, 3) checking UTM coordinates for accuracy or assigning coordinates if they are missing, 4) reviewing stack data, 5) reviewing SIC and SCC code assignments, and 6) reviewing temporal data for accuracy. District staff will provide guidance to the students. Staff at the Yolo-Solano AQMD has agreed to be a "test" district which will serve as a test bed for working out details of data review protocols.

Each team will carry a Global Positioning System (GPS) unit. If time permits, students will drive to facilities with missing or suspicious UTM coordinates and record the correct coordinate using the GPS.

Updating Data

Students will update the data as directed by district and ARB staff. The data will be updated in CEIDARS-LITE files that will be created by ARB staff. Students will review the data for accuracy. ARB will then update the files into a test database. From there, quality assurance reports will be run. The students will investigate any data that appears questionable. Information currently available for each facility will be provided in reports from CEIDARS to compare with the revised data. The students will check for reasonableness and investigate as needed. ARB and district staff will also review the data for accuracy before uploading into CEIDARS.

Budget

CCOS will provide \$40,000 to UC Davis. UC Davis will then pay the students (typically about \$8/hour). The details will be worked out in an interagency agreement.

Table 1
Number of Facilities and Processes in 1997
Emissions >10 tons per year of TOG, NO_x, CO, SO_x, or PM₁₀

MOUNTAIN COUNTIES

District	Number of Facilities	Number of Processes
Amador County APCD	8	122
Calaveras County APCD	0	0
El Dorado County APCD	4	41
Mariposa County APCD	0	0
Northern Sierra AQMD	9	188
Tuolumne County APCD	7	28
Total for Mountain Counties	28	379

SACRAMENTO VALLEY

District	Number of Facilities	Number of Processes
Butte County AQMD	19	204
Colusa County APCD	24	46
Feather River AQMD	19	62
Glenn County APCD	16	165
Placer County APCD	16	71
Shasta County APCD	18	42
Tehama County APCD	7	10
Yolo-Solano AQMD	41	286
Total for Sacramento Valley	160	886

Table 2
Mountain Counties – Facilities Proposed For Review Sorted by Facility Type (SIC)

Facility SIC		SIC Name	Total # Facilities		District	# Facilities in Each District
2421		SAWMILLS & PLANING MILLS, GNL	9		Amador	1
					El Dorado	2
					No. Sierra	3
					Tuolumne	3
1442		CONSTRUCTION SAND AND GRAVEL	4		No. Sierra	4
1411		DIMENSION STONE	2		Amador	2
1422		CRUSHED AND BROKEN LIMESTONE	2		El Dorado	1
					Tuolumne	1
1429		CRUSHED AND BROKEN STONE, NEC	2		Tuolumne	2
4911		ELECTRIC SERVICES	2		Amador	2
1041		GOLD ORES	1		No. Sierra	1
1446		INDUSTRIAL SAND	1		Amador	1
1459		CLAY AND RELATED MINERALS, NEC	1		Amador	1
2511		WOOD HOUSEHOLD FURNITURE	1		No. Sierra	1
2899		CHEMICAL PREPARATIONS, NEC	1		Amador	1
3084		PLASTICS PIPE	1		El Dorado	1
9223		CORRECTIONAL INSTITUTIONS	1		Tuolumne	1
		TOTAL FACILITIES	28			

Table 3
Sacramento Valley – Facilities Proposed for Review Sorted by Facility Type (SIC)

Facility SIC		SIC Name	Total # Facilities		District	# Facilities in Each District
723		CROP PREPARATION SVCS FOR MKT	20		Butte	7
					Colusa	2
					Feather River	3
					Glenn	2
					Yolo-Solano	6
1311		CRUDE PETRO AND NATURAL GAS	18		Feather River	7
					Glenn	10
					Yolo-Solano	1
1381		DRILLING AND OIL AND GAS WELLS	12		Colusa	12
2421		SAWMILLS & PLANING MILLS, GNL	10		Butte	1
					Feather River	1
					Placer	1
					Shasta	6
					Tehama	1
2044		RICE MILLING	8		Colusa	4
					Yolo-Solano	4
5171		PETRO BULK STATIONS/TERMINALS	7		Butte	1
					Colusa	3
					Yolo-Solano	3
1442		CONSTRUCTION SAND AND GRAVEL	6		Glenn	2
					Placer	1
					Yolo-Solano	3
2033		CANNED FRUITS AND VEGETABLES	5		Butte	1
					Feather River	1
					Yolo-Solano	3
2611		PULP MILLS	5		Butte	3
					Shasta	2
2951		PAVING MIXTURES AND BLOCKS	6		Feather River	2
					Placer	1
					Shasta	3
4931		ELECTRIC & OTHER SERVICES COMB	5		Colusa	1
					Feather River	2
					Shasta	2
2431		MILLWORK	4		Placer	2
					Shasta	1
					Tehama	1
4911		ELECTRIC SERVICES	4		Butte	1
					Feather River	1
					Placer	1
					Yolo-Solano	1

Table 3 (Continued)
Sacramento Valley – Facilities Proposed for Review Sorted by Facility Type (SIC)

Facility SIC		SIC Name	Total # Facilities		District	# Facilities in Each District
1429		CRUSHED AND BROKEN STONE, NEC	2		Butte	1
					Glenn	1
2452		PREFABRICATED WOOD BUILDINGS	2		Yolo-Solano	2
3241		CEMENT, HYDRAULIC	2		Shasta	2
4923		GAS TRANSMISSION/DISTRIBUTION	2		Colusa	1
					Tehama	1
4924		NATURAL GAS DISTRIBUTION	2		Tehama	2
1481		NONMETALLIC MINERALS SERVICES	1		Shasta	1
1611		HIGHWAY & STREET CONSTRUCTION	1		Yolo-Solano	1
2063		BEET SUGAR	1		Yolo-Solano	1
2077		ANIMAL & MARINE FATS AND OILS	1		Yolo-Solano	1
2295		COATED FABRICS, NOT RUBBERIZED	1		Colusa	1
2436		SOFTWOOD VENEER AND PLYWOOD	1		Placer	1
2439		STRUCTURAL WOOD MEMBERS, NEC	1		Placer	1
2451		MOBILE HOMES	1		Yolo-Solano	1
2491		WOOD PRESERVING	1		Butte	1
2511		WOOD HOUSEHOLD FURNITURE	1		Feather River	1
2541		WOOD PARTITIONS AND FIXTURES	1		Placer	1
2656		SANITARY FOOD CONTAINERS	1		Tehama	1
2752		COMMERCIAL PRINT/LITHOGRAPH	1		Yolo-Solano	1
2834		PHARMACEUTICAL PREPARATIONS	1		Yolo-Solano	1
2873		NITROGENOUS FERTILIZERS	1		Yolo-Solano	1
3083		LAMINATED PLSTCS PLATE & SHEET	1		Placer	1
3084		PLASTICS PIPE	1		Yolo-Solano	1
3086		PLASTICS FOAM PRODUCTS	1		Yolo-Solano	1
3259		STRUCTURAL CLAY PRODUCTS, NEC	1		Placer	1
3272		CONCRETE PRODUCTS, NEC	1		Yolo-Solano	1
3273		READY-MIXED CONCRETE	1		Yolo-Solano	1
3295		MINERALS, GROUND OR TREATED	1		Butte	1
3296		MINERAL WOOL	1		Glenn	1
3411		METAL CANS	1		Placer	1
3412		METAL BARRELS, DRUMS, & PAILS	1		Placer	1
3479		METAL COATING/ALLIED SERVICES	1		Yolo-Solano	1
3523		FARM MACHINERY AND EQUIPMENT	1		Yolo-Solano	1
3674		SEMICONDUCTORS/RELATED DEVICES	1		Placer	1
3711		MOTOR VEHICLES AND CAR BODIES	1		Butte	1
3792		TRAVEL TRAILERS AND CAMPERS	1		Yolo-Solano	1
3827		OPTICAL INSTRUMENTS AND LENSES	1		Placer	1
4491		MARINE CARGO HANDLING	1		Yolo-Solano	1
4613		REFINED PETROLEUM PIPE LINES	1		Placer	1

Table 3 (Continued)
Sacramento Valley – Facilities Proposed for Review Sorted by Facility Type (SIC)

Facility SIC		SIC Name	Total # Facilities		District	# Facilities in Each District
4922		NATURAL GAS TRANSMISSION	1		Shasta	1
4925		GAS PRODUCTION AND/OR DISTRIB	1		Butte	1
4959		SANITARY SERVICES, NEC	1		Tehama	1
7532		TOP & BODY REPAIR/PAINT SHOPS	1		Yolo-Solano	1
8221		COLLEGES & UNIVERSITIES, NEC	1		Yolo-Solano	1
9223		CORRECTIONAL INSTITUTIONS	1		Yolo-Solano	1
9711		NATIONAL SECURITY	1		Feather River	1
		TOTAL FACILITIES	160			

Table 4
Proposed List of Districts Handled by Each Team

Team 1

Team 2

Districts in the Mountain Counties:

Districts in the Sacramento Valley:

Amador County APCD
El Dorado County APCD
Northern Sierra AQMD *
Tuolumne County APCD *

Butte County APCD *
Colusa County APCD
Feather River AQMD
Glenn County APCD *
Yolo-Solano AQMD

Districts in the Sacramento Valley:

Placer County APCD
Shasta County APCD *
Tehama County APCD *

* Will likely require an overnight stay.

Table 5
Number of Facilities Handled by Each Team Sorted by Facility Type (SIC)

General Category	Facility SIC	SIC Name	Total # Fac	# Fac for Team 1	# Fac for Team 2	# Proc for Team 1	# Proc for Team 2
Food & Ag	723	CROP PREPARATION SVCS FOR MKT	20	0	20	0	135
Food & Ag	2044	RICE MILLING	8	0	8	0	47
Food & Ag	2033	CANNED FRUITS AND VEGETABLES	5	0	5	0	20
Food & Ag	2063	BEET SUGAR	1	0	1	0	11
Food & Ag	2077	ANIMAL & MARINE FATS AND OILS	1	0	1	0	3
Total Food & Ag			35	0	35	0	216
Oil & Gas	1311	CRUDE PETRO AND NATURAL GAS	18	0	18	0	57
Oil & Gas	1381	DRILLING AND OIL AND GAS WELLS	12	0	12	0	16
Oil & Gas	5171	PETRO BULK STATIONS/TERMINALS	7	0	7	0	80
Oil & Gas	4613	REFINED PETROLEUM PIPE LINES	1	1	0	1	0
Total Oil & Gas			38	1	37	1	153
Wood & Wood Products	2421	SAWMILLS & PLANING MILLS, GNL	19	17	2	110	8
Wood & Wood Products	2611	PULP MILLS	5	2	3	8	28
Wood & Wood Products	2431	MILLWORK	4	4	0	9	0
Wood & Wood Products	2452	PREFABRICATED WOOD BUILDINGS	2	0	2	0	9
Wood & Wood Products	2511	WOOD HOUSEHOLD FURNITURE	2	1	1	2	6
Wood & Wood Products	2436	SOFTWOOD VENEER AND PLYWOOD	1	1	0	11	0
Wood & Wood Products	2439	STRUCTURAL WOOD MEMBERS, NEC	1	1	0	1	0
Wood & Wood Products	2451	MOBILE HOMES	1	0	1	0	2
Wood & Wood Products	2491	WOOD PRESERVING	1	0	1	0	8

Table 5 (Continued)
Number of Facilities Handled by Each Team Sorted by Facility Type (SIC)

General Category	Facility SIC	SIC Name	Total # Fac	# Fac for Team 1	# Fac for Team 2	# Proc for Team 1	# Proc for Team 2
Wood & Wood Products	2541	WOOD PARTITIONS AND FIXTURES	1	1	0	2	0
Total Wood			37	27	10	143	61
Stone, Concrete & Related	1442	CONSTRUCTION SAND AND GRAVEL	10	5	5	141	57
Stone, Concrete & Related	2951	PAVING MIXTURES AND BLOCKS	6	4	2	15	8
Stone, Concrete & Related	1429	CRUSHED AND BROKEN STONE, NEC	4	2	2	10	24
Stone, Concrete & Related	1411	DIMENSION STONE	2	2	0	36	0
Stone, Concrete & Related	1422	CRUSHED AND BROKEN LIMESTONE	2	2	0	26	0
Stone, Concrete & Related	3241	CEMENT, HYDRAULIC	2	2	0	5	0
Stone, Concrete & Related	1446	INDUSTRIAL SAND	1	1	0	17	0
Stone, Concrete & Related	1459	CLAY AND RELATED MINERALS, NEC	1	1	0	13	0
Stone, Concrete & Related	1481	NONMETALLIC MINERALS SERVICES	1	1	0	1	0
Stone, Concrete & Related	3259	STRUCTURAL CLAY PRODUCTS, NEC	1	1	0	12	0
Stone, Concrete & Related	3272	CONCRETE PRODUCTS, NEC	1	0	1	0	5
Stone, Concrete & Related	3273	READY-MIXED CONCRETE	1	0	1	0	2
Stone, Concrete & Related	3295	MINERALS, GROUND OR TREATED	1	0	1	0	13
Stone, Concrete & Related	3296	MINERAL WOOL	1	0	1	0	41
Total Stone			34	21	13	276	150

Table 5 (Continued)
Number of Facilities Handled by Each Team Sorted by Facility Type (SIC)

General Category	Facility SIC	SIC Name	Total # Fac	# Fac for Team 1	# Fac for Team 2	# Proc for Team 1	# Proc for Team 2
Electric & Gas Services	4911	ELECTRIC SERVICES	6	3	3	23	20
Electric & Gas Services	4931	ELECTRIC & OTHER SERVICES COMB	5	2	3	2	9
Electric & Gas Services	4923	GAS TRANSMISSION/DISTRIBUTION	2	1	1	1	1
Electric & Gas Services	4924	NATURAL GAS DISTRIBUTION	2	2	0	4	0
Electric & Gas Services	4922	NATURAL GAS TRANSMISSION	1	1	0	1	0
Electric & Gas Services	4925	GAS PRODUCTION AND/OR DISTRIB	1	0	1	0	1
Electric & Gas Services	4959	SANITARY SERVICES, NEC	1	1	0	1	0
Total Electric			18	10	8	32	31
Other	3084	PLASTICS PIPE	2	1	1	5	3
Other	9223	CORRECTIONAL INSTITUTIONS	2	1	1	3	6
Other	1041	GOLD ORES	1	1	0	13	0
Other	1611	HIGHWAY & STREET CONSTRUCTION	1	0	1	0	2
Other	2295	COATED FABRICS, NOT RUBBERIZED	1	0	1	0	2
Other	2656	SANITARY FOOD CONTAINERS	1	1	0	2	0
Other	2752	COMMERCIAL PRINT/LITHOGRAPH	1	0	1	0	3
Other	2834	PHARMACEUTICAL PREPARATIONS	1	0	1	0	18
Other	2873	NITROGENOUS FERTILIZERS	1	0	1	0	7
Other	2899	CHEMICAL PREPARATIONS, NEC	1	1	0	6	0
Other	3083	LAMINATED PLSTCS PLATE & SHEET	1	1	0	10	0

Table 5 (Continued)
Number of Facilities Handled by Each Team Sorted by Facility Type (SIC)

General Category	Facility SIC	SIC Name	Total # Fac	# Fac for Team 1	# Fac for Team 2	# Proc for Team 1	# Proc for Team 2
Other	3086	PLASTICS FOAM PRODUCTS	1	0	1	0	3
Other	3411	METAL CANS	1	1	0	3	0
Other	3412	METAL BARRELS, DRUMS, & PAILS	1	1	0	2	0
Other	3479	METAL COATING/ALLIED SERVICES	1	0	1	0	2
Other	3523	FARM MACHINERY AND EQUIPMENT	1	0	1	0	2
Other	3674	SEMICONDUCTORS/RELATED DEVICES	1	1	0	3	0
Other	3711	MOTOR VEHICLES AND CAR BODIES	1	0	1	0	4
Other	3792	TRAVEL TRAILERS AND CAMPERS	1	0	1	0	1
Other	3827	OPTICAL INSTRUMENTS AND LENSES	1	1	0	3	0
Other	4491	MARINE CARGO HANDLING	1	0	1	0	13
Other	7532	TOP & BODY REPAIR/PAINT SHOPS	1	0	1	0	2
Other	8221	COLLEGES & UNIVERSITIES, NEC	1	0	1	0	69
Other	9711	NATIONAL SECURITY	1	0	1	0	15
Total Other			26	10	16	50	152
		Total Number by Team	188	69	119	502	763